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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/752,434	01/06/2004	Yeshwanth Narendar	S1432-700819	3742
37462	7590	07/13/2006	EXAMINER	
LOWRIE, LANDO & ANASTASI RIVERFRONT OFFICE ONE MAIN STREET, ELEVENTH FLOOR CAMBRIDGE, MA 02142			GROUP, KARL E	
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/752,434	NARENDAR ET AL.	
	Examiner	Art Unit	
	Karl E. Group	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 26 May 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-15 and 23-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 25-29 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 14, 15, 23, 24 and 30-37 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4-14-06.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

***Election/Restrictions***

1. This application contains claims 1-13,25-29 drawn to an invention nonelected with traverse in Paper dated 7-27-05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01. Furthermore, the non-elected species of silicon nitride and aluminum oxide.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 14,15,23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims stand rejected for the terminology recrystallized silicon nitride and aluminum oxide. It cannot be determined how recrystallized silicon nitride and recrystallized aluminum oxide are formed and the microstructure of these recrystallized compounds. Applicants are requested to submit clear descriptions of these materials and evidence that these materials exist and known to applicants at the time of filing of the instant application.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 14,15,23,24,30-32,37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims stand rejected since it is not clear if the limitation "active impurity component at a concentration of less than 1 ppm limits the entire impurity content to less than 1 ppm or each single impurity to less than 1 ppm. Applicants have not addressed this rejection.

The rejection of the claims for failing to define the active impurity is withdrawn in view applicants' argument that *non-limiting* examples are disclosed on page 21 of the specification. Because the definition in the disclosure is non-limiting the term "active impurity" in the claim is considered any impurity element.

#### ***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 14,15,23,24,30-34 and 37 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese documents 10-228974 and 07-328360, each taken alone, for reasons of record.

Applicants' argument that neither reference teaches "active impurity" content less than 1 ppm is not persuasive in overcoming the rejection. It is noted that "active impurity" is defined as any species that can be transferred from the ceramic article into a substrate or working article. There are also examples of such impurities however applicants point out that the claims are not limited to these examples. Therefor the term

"active impurity is interpreted as any element that may possibly be transferred to an article, even those not disclosed in the specification. Because the Japanese documents fail to teach the presence of nickel, iron, titanium, zirconium, rare earths, etc. the contents are considered to be zero. The claims only require one component to be less than 1 ppm. It is still not clear what elements or compounds are being limited in the claims. One may only guess at what elements may be encompassed by the terminology "active impurity".

Applicants further argue because the Japanese documents are directed toward heaters the processing involves introduction of impurities. This is not persuasive in overcoming the rejection because it is not clear what impurities would be introduced during processing, as well as the instant claims fail to define what elements are limited by the term "active impurity". The term "active impurity" is defined as any species that may be transferred however it is not clear what species this includes (the examples are non-limiting). Furthermore, the claims only require one specie to be less than 1 ppm therefore as long as the body in the Japanese documents has one element in an amount less than 1 ppm it is considered to be within the scope of the claim. Clearly the bodies of the Japanese documents would have at least one element from the periodic table not be present.

It is further argued that neither reference teaches a network of pores. It is emphasized that a "network" of pores does not require the pores to be interconnected. Applicants are not claiming an "interconnected network" of pores. Furthermore, JP 07-3283620 teaches a honeycomb structure that would inherently be interconnected pores.

JP 228974 teaches are flow through the body which would require connected pores, see page 3 of the translation.

8. Claims 33 and 34 are 35 U.S.C. 102(b) as being anticipated by Holmes et al (5,770,324), for reasons of record.

Contrary to applicants remarks, Holmes et al clearly teach recrystallized silicon carbide with a pore size of 6 to 10 microns with open porosity, column 2, lines 9-15. Whether the recrystallized silicon carbide disclosed is economical is not material to the anticipation of the claims. Holmes et al disclose the silicon carbide that falls within the scope of the claims.

9. Claims 14,15,23,24,30-37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dubots et al (6,162,543), for reasons of record.

Applicants argue that Dubots et al fail to teach an active impurity concentration of less than 1 ppm as in claims 14 and 30 (note claim 33 does not have a limitation to impurity. Column 5, lines 5-21 teach an iron impurity content of less than .1 ppm in the converted SiC material (note examples 1 and 2 that the converted graphite is SiC)).

Applicants further argue that Dubots et al fail to teach a network of pores. Again it is emphasized that network does not require interconnected pores. In any means, in order for the silicon to impregnate the converted SiC material the pores must be interconnected. As to the pore size ((claim 30 does not require a pore size) it can be determined from the micrograph of figure 3 that the pore size is greater than 5 microns. Applicants also argue the impurity amount less than 10 ppm in Dubots et al is not equal

to the less than 1 ppm in the claims. The 10 ppm of Dubots et al is the entire impurity amount; applicants' claims do not require the entire impurity amount to be less than 10 ppm but "an active impurity amount less than 1 ppm. The iron impurity of Dubots et al is .1 ppm therefor meeting the limitation of the claims. Applicants' argument that the .1 ppm impurity of iron taught by Dubots et al is not analogous to the active impurity amount is not understood because the specification defines iron as an active impurity, page 15.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl E. Group whose telephone number is 571-272-1368. The examiner can normally be reached on M-F (6:30-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Karl E Group  
Primary Examiner  
Art Unit 1755

Keg  
6-27-06